

Renal Pelvic Tumour Diagnosed Incidentally after Traumatic Rupture of Hydronephrotic Kidney

A. N. KÖK,* N. E. AYDIN,** Ö. KOLUSAYIN***

Departments of *Forensic Medicine and **Pathology, Atatürk University,
School of Medicine, Erzurum, Turkey; ***Council of Forensic Medicine,
Istanbul, Turkey

(Accepted January 10, 1994)

A 27-year-old man was found to have a low grade transitional cell tumour of the renal pelvis at pathological examination of his traumatically ruptured kidney. The kidney was also hydronephrotic due to urolithiasis of long duration. The medico-legal aspects of the case are evaluated.

There is a general view that transitional cell tumours of the renal pelvis and ureter are being reported more frequently due to analgesic abuse [1, 2]. We report a low grade transitional cell tumour of the renal pelvis discovered incidentally in a patient who had a long history of analgesic intake due to urolithiasis.

Case report

A 27-year-old man was severely beaten and hit with several kicks on his right flank. Soon after this, he experienced unremitting right flank pain and gross haematuria. Upon hospitalization an emergency IVP showed prominent extravasation of contrast medium along with prominent hydronephrosis (Fig. 1). The extravasation necessitated surgical exploration which revealed widespread retroperitoneal clotted blood and urine. Upon visualization of the right kidney, rupture on the superior pole and prominent hydronephrosis were seen. A 4×3 cm stone was removed by nephrotomy and several others were seen in the lower pole. A nephrectomy was performed and postoperative recovery was unremarkable.

The specimen received was a hydronephrotic kidney weighing 210 g with dimensions of 12×7×5 cm. The upper pole had three linear ruptures, the biggest measuring 7 cm. Kidney parenchyma was thinned, the excretory space was dilated, with multiple stones about 1 and 1.5 cm. The ureteropelvic junction showed a tiny arborescent mucosal surface. In histological sections the pelvic mucosa showed a thickened transitional cell layer and short papillary protrudings (Fig. 2). On high power there was slight nuclear enlargement but no mitotic activity (Fig. 3). Serial sectioning did not show invasion of the



Fig. 1. Prominent extravasation of contrast material during the late phase of IVP



Fig. 2. Papillary protrudings of transitional epithelium (Haematoxylin and eosin, $\times 100$)

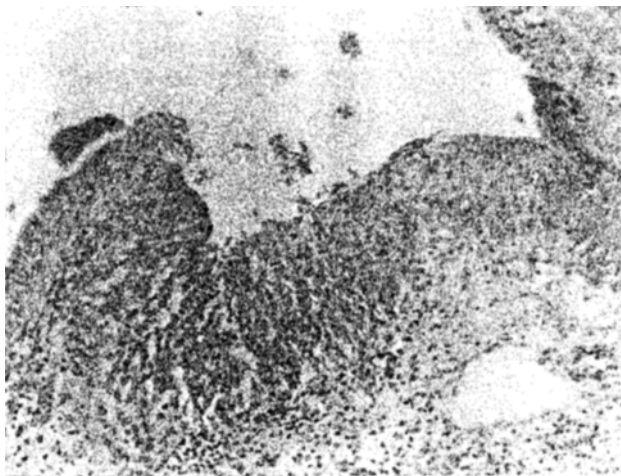


Fig. 3. High-power view of epithelium showing crowding and slight nuclear enlargement (Haematoxylin and eosin, $\times 400$)

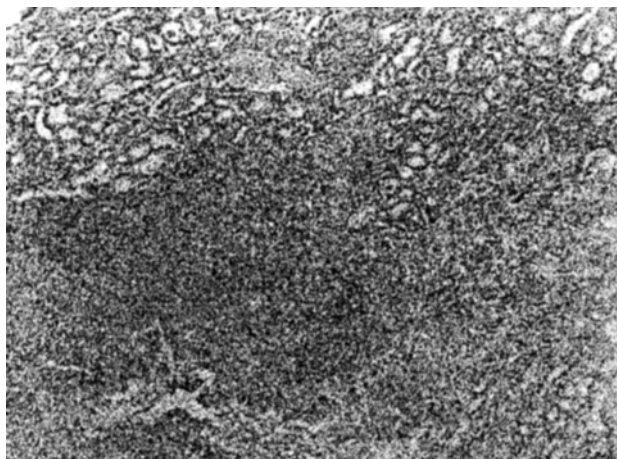


Fig. 4. Section from haemorrhagic rupture of kidney parenchyma with tubular casts and leucocytic reaction (Haematoxylin and eosin, $\times 100$)

underlying tissues. The kidney parenchyma showed haemorrhage and reactive changes with leucocytic infiltration, tubular haemoglobinuric casts (Fig. 4). A low grade, non-invasive transitional cell tumour (grade I/IV) and hydronephrosis due to long-standing renal stones were given as pathological findings in addition to the traumatic rupture. The biochemical analysis revealed calcium oxalate structure of the stones.

Discussion

Approximately 5 to 10% of primary kidney tumours occur in the renal pelvis [2]. Histologically these are the exact counterparts of the ones seen in the urinary bladder mucosa [1–3]. The age of discovery is in old decades and it is rare to find patients under 30 years [1, 3].

Discovery of a renal tumour following trauma is a rare occurrence [4, 5]. Incidental finding of a tumour in the excretory system following trauma was reported twice, exclusively in the French literature [5]. However, our case is unique in regard to the patient's young age and early phase of tumour development. This is a good example of early diagnosis that is aimed in every cancer case. Urothelial tumours are notorious in their slow but unremitting growth phase which may take years for invasion and metastasis to develop [1–3].

Analgesic abuse and smoking habits are accused along with several carcinogens in the industry [1–3].

The patient presented here gave a history of frequent analgesic consumption but the details could not be ascertained due to his departure to another locale. Forensic implications regarding this situation will be evaluated according to Article 456 of the Turkish Penal Code, and should be admitted as an assault since there has been an incapability of returning to his regular job, and daily activities [6]. However, the potential effect of the existing hydronephrosis on the rupture and entity of precipitation should also be contemplated.

Rupture of the kidney has compelled a nephrectomy, thus loss of physical faculty caused by this assault that has also resulted in danger of life will involve both Criminal and Civil Acts.

Referring to the Turkish Civil Act, the permanent loss of one kidney obliging a compensation is regarded as a disability [7].

Though the pathological findings of this case may be overestimated as an existing insufficiency of the organ, since the kidney had been functioning properly owing to the maintenance of the parenchyma, disability needs to be mentioned. Therefore disablement benefit will be considered and the amount paid will depend upon the assessment of disablement expressed as a percentage made by a legal medical board, the Council of Forensic Medicine of Turkey.

References

1. Bennington, J. L., Beckwith, J. B.: Tumors of the kidney, renal pelvis and ureter. AFIP, Washington 1975.
2. Cotran, R. S., Kumar, V., Robbins, S. L.: Robbin's Pathologic Basis of Disease. W. B. Saunders Co., Philadelphia 1990.
3. Rosai, J.: Ackerman's Surgical Pathology. The C. V. Mosby Co., St. Louis 1989.
4. Crechi, G., Carini, M.: Renal carcinoma in a child simulating post-traumatic haematoma. *Br. J. Urol.*, 52, 65 (1980).
5. Bellin, J., Durand, M., Laurent, J. M., Gagliardi, J. J., Gervais, C. F.: Tumeur de la voie excrétrice découverte au décours d'un traumatisme rénal. *J. d'Urologie*, 97, 150 (1991).
6. Erem, F.: Turkish Penal Code (in Turkish). Seçkin Publishing House, Ankara 1985.
7. Kiliçoğlu, A.: Turkish Civil Act (in Turkish). Alkim Publishing House, Ankara 1992.